

EXHIBIT 45



Display RevForce

December 9, 2015

display-rev-team@

GOOGLE CONFIDENTIAL AND PROPRIETARY



Today's Agenda

1. GDN-DBM Customer Segmentation Update
2. Q4 2015 Display Revenue Staples (brief)
3. AwBid Update
4. Mobile Apps Metrics Review
5. Thanksgiving update

*Note on scheduling: to accommodate the 2016 DVAA leads schedule,
we will be moving Display RevForce to Thursdays!
Starting 7-Jan, RevForce will take place on Thursdays from 12pm to 1pm.*



Intro to AwBid (AdWords Cross Exchange Bidder)

What: AwBid allows AdWords **remarketing** advertisers to buy ads on Non-Google inventory.

How: AwBid integrates with third party sell-side platforms and exchanges through real-time bidding interfaces.

Why: Close inventory gap and drive performance in competitive remarketing buy-side space, and capture some of the 63% of budget unconstrained AdWords web spend.

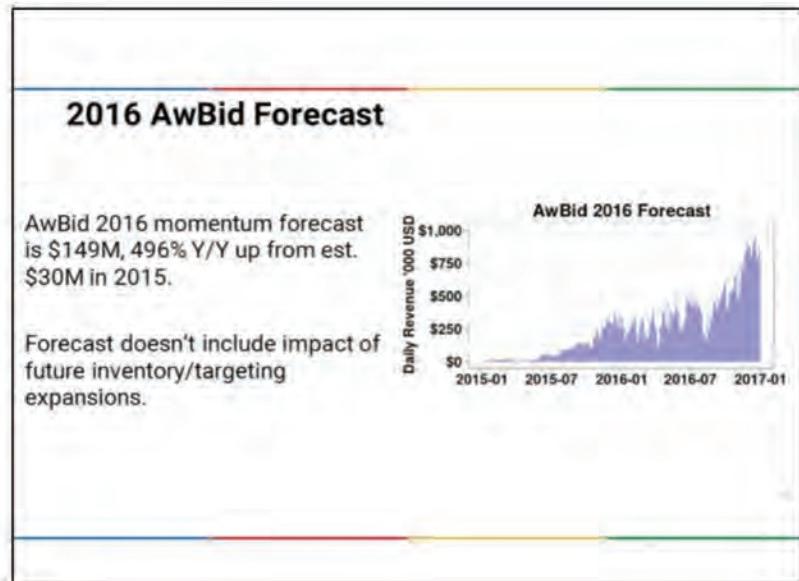
When: AwBid has been operating since Q2 2013, but started accelerating rapidly in Q3 2015. Revenue set to increase with new exchanges and quality tunings.

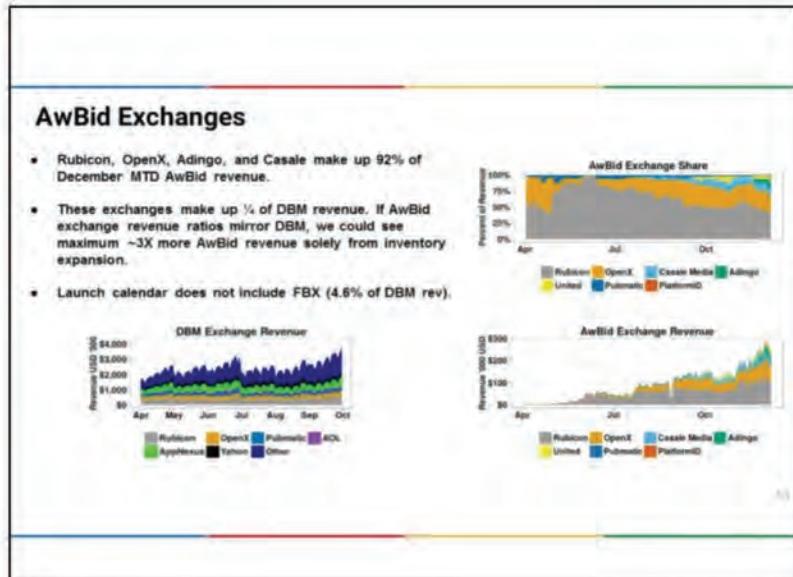
Date	Daily Revenue (USD)
2013-Q3	\$100M
2014-Q1	\$100M
2014-Q3	\$250M
2015-Q3	\$250M

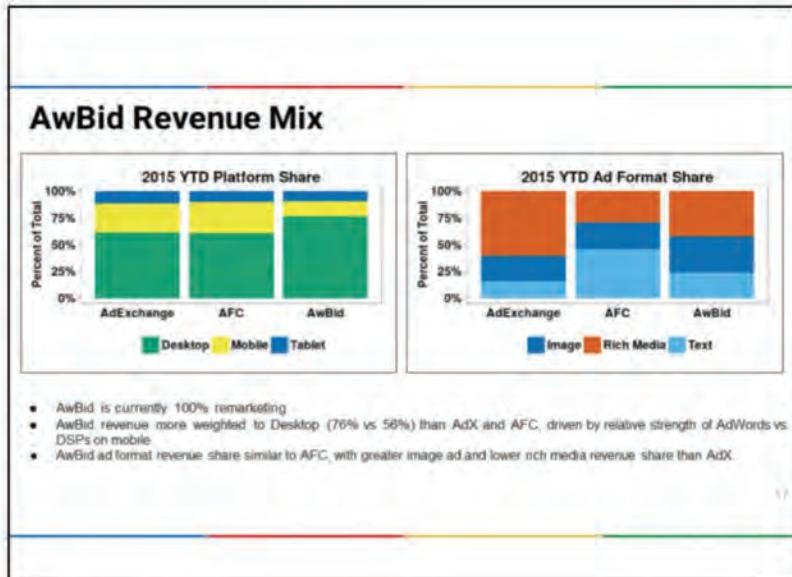
Main Findings

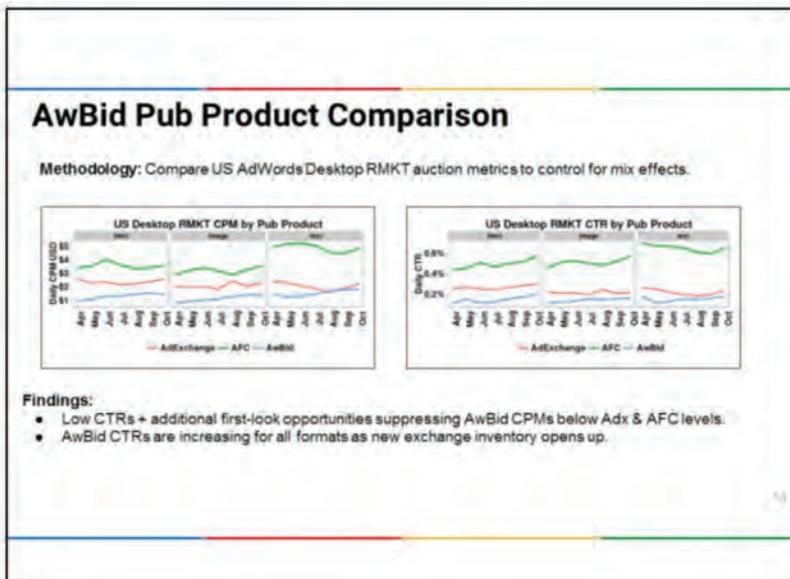
1. AwBid revenue is growing quickly, now driving **0.94ppt** of Q4 AdWords web growth:
 - a. Rubicon, OpenX, Casale, and Adingo fully ramped.
 - b. Type-2 bidding boosted revenue 50% Y/Y by reducing latency and view loss.
2. AwBid CPD is 40-70% of AdX and AFC CPDs, but increasing with CTRs as inventory ramps.
3. AdWords has 2-5X lower CPC/CPMs and higher CTRs on AwBid vs DBM* on Non-Google inv.
4. **Incrementality:** There is limited evidence to support AwBid cannibalization of Google inventory spend, but that could change if inventory growth out-paces budgets.
5. **Revenue Opportunities:**
 - a. Continue planned exchange expansion (~200-300%+)
 - b. Reduce time-out frequency for GPA from ~40% (17%+)
 - c. Add FBX (4%) and other 'Walled Garden' formats.
 - d. Expanding targeting beyond RMKT (200%+).
 - e. Dynamic Rev Share (+33% for 15-32% margin, +61% for 0-32% margin vs fixed 32%).

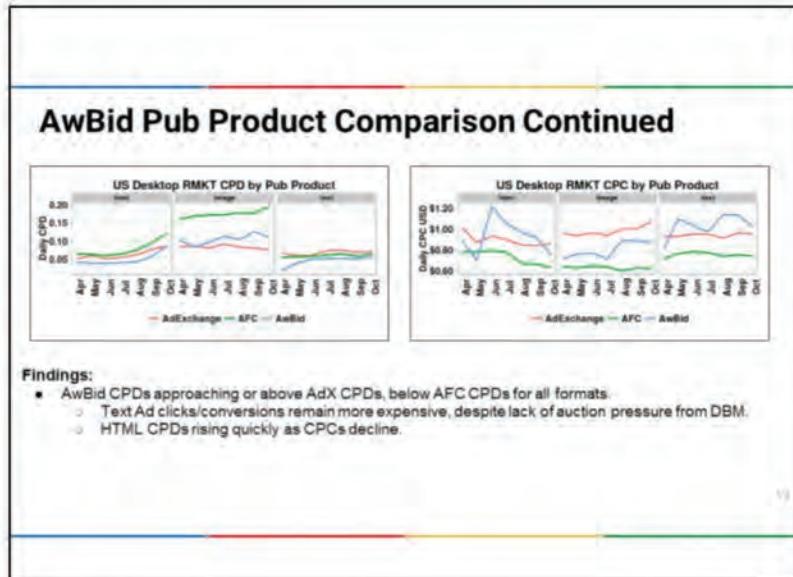
*Not controlling for brand/DR mix, which skews DBM CTR down and CPC up due to higher brand share







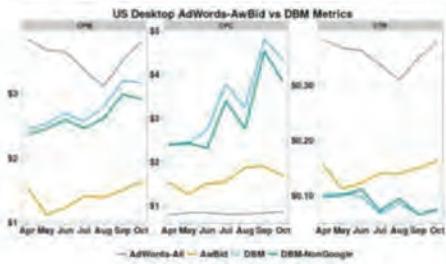




AwBid - DBM* Comparison

In US Desktop:

- AdWords on Google Inventory has highest CTR and lowest CPC, reflecting differing bidding optimizations.
- AwBid CPMs lowest, reflecting low pCTR and additional first-look opportunities.
- AwBid CPMs below DBM, rising even as new exchanges ramp.
- AwBid can place text ads on Non-Google inventory, unlike DBM.



*Not controlling for brand/DR mix, which skews DBM CTR down and CPC up due to higher brand share

Id	Date	Text
1	12/09/2015 17:10:32	For this comparison to make sense, it needs to be apples to apples. We should compare AwBid to auto-optimized DBM remarketing spend only (not all of DBM).
1	12/09/2015 17:10:32	I agree... we will add a clear note stating that we can't draw conclusions from an AwBid comparison to all of DBM. In the meantime, I am following up to see if we can track DBM RMKT only performance metrics for a more appropriate comparison. +ramilsohti@google.com +mattguio@google.com

